

valuable addition to our literature. We have of course confined our remarks to that department of the work which is more immediately devoted to the natural history of the country; and yet this is by no means the scope of the book before us. The Singhalese chronicles have been ransacked, Buddhism and Buddhist monuments explored with careful minuteness, population and caste, sciences and the social arts, agriculture and commerce, manufactures and literature, are in turn treated of, and the mediæval history of Ceylon traced with the hand of a master and an erudition rarely brought to bear upon such a subject.

The second volume is devoted to the modern history and resources of the country, including a chapter upon Elephants, replete with anecdote, and illustrated, as indeed is the rest of the work, with woodcuts of no ordinary excellence.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

Jan. 25, 1859.—E. W. H. Holdsworth, Esq., F.L.S., in the Chair.

NOTES ON THE HABITS OF THE MYCTERIA AUSTRALIS OR NEW HOLLAND JABIRU (GIGANTIC CRANE OF THE COLONISTS). BY GEORGE BENNETT.

A short time since, I purchased this rare bird, which was brought alive to Sydney from Port Macquarie, and so little being known respecting its habits, I considered the following notes might be interesting to the Society. It appears to be a young male, and walks about the yard of the house quite domesticated, making no attempt to fly, nor showing any inclination to leave its domicile. These birds have a wide range over the colony, more particularly about the northern coasts of Australia, and are seen occasionally within the heads and about the sand-banks of the Clarence and Macleay Rivers; they are very difficult of approach, and consequently but few have been obtained, this being the first specimen ever brought alive to Sydney. Among the principal residents in the interior, some inform me that they have only seen four, others only one, during a residence of from twenty-five to thirty years in different parts of the colony. In Leichhardt's Expedition (according to the account of Mr. Murphy, now residing in Sydney) only two were seen; and these could not be approached sufficiently near to be shot. In 1839 a specimen was shot on Hunter's River, and another on the north shore near Sydney about three years since, both of which were presented to the Australian Museum. The person who shot the last bird had the greatest difficulty in procuring it, from its being so very shy and watchful: he was obliged to follow it for several days in its haunts about the salt-water creeks, until he could get sufficiently near to shoot it, which, being a good marksman, he achieved as soon as he could approach within range. Both these specimens were full-

grown males, and in fine and brilliant adult plumage. These birds being so rarely seen, and difficult to procure when seen, are valuable as specimens when dead, and much more so when alive. Many of the residents of the northern districts had seen the bird, but rarely, and at a distance, and were aware how difficult it was to procure it; but none had ever seen it in captivity before, and it was therefore regarded with great interest. The number of skins of this bird I have seen during my residence of twenty-two years in the colony only amounts to four. The bird is very graceful: its attitudes, and bearing, whether in a state of repose, stalking rapidly, or walking gently over a lawn or yard with its measured, noiseless steps, have a combination of grace and elegance, and it displays an independence of manner that might be expected in a bird so wild and roaming in its habits. It is gentle and good-tempered, soon gets reconciled to captivity, and seems to take pleasure in being noticed and admired, remaining very quiet to be looked at—keeping a bright eye upon the spectator, however, during the time. Although, when first seen, it has an uncouth appearance, from the large size of the mandibles in proportion to the body, yet on a closer acquaintance its manner wins upon you, and a feeling of attachment arises towards it from its placid, tame, domesticated manner, elegance of form, graceful carriage, and beautiful metallic brilliancy of plumage, more especially over the head and neck.

This bird had been in captivity four months previous to its arrival in Sydney, having been captured by the blacks. It permits any one to approach it, only timidly moving away when an attempt is made to touch it. It sometimes stands quite erect, or on one leg, with the other thrown out; or rests upon the tarsi, like the Emeu and Mooruk, and again upon one leg, with the bill inclined upon the breast. It was very hungry on its arrival at my house, and with the greatest facility devoured $1\frac{1}{2}$ lb. of beef cut into small pieces, placed in a tub of water, or caught the meat in the mandibles when thrown to it. It also feeds on fish and reptiles. When the food is hard or gristly, it is rejected from the mandibles after trying to masticate it, and bruised with the point of the beak until it becomes sufficiently soft to be swallowed. It feeds generally in the mornings and evenings; and although the mandibles look so large, it picks up the smallest object with great readiness, and clatters the mandibles with a loud noise when catching flies. It preens its feathers, and removes any dirt or insects from them very neatly with the bill, accompanying the action with a degree of ease and grace pleasing to observe. When a tub of water was placed near it, it placed one leg in it; and after drinking, filled its bill with water and threw it out again, as if washing out the mandibles. The eye is very large and remarkably brilliant, and yet imparts to the bird a great docility of expression, making it appear—what it is—an amiable bird, familiar with all around it, liking to court admiration, yet on the watch for any act of aggression. It appears pleased to see any stranger, and evinces but little fear. The horses coming into the yard even close to it, or any noise, do not seem to annoy it; it only moves gently out of the way.

When suddenly startled, it will flap its long and powerful wings as if preparing for flight; and it may be regarded as a bird of flight, the whole bulk of the body being so light in comparison with its powerful organs of flight. This bird is partial to salt-water creeks and lagoons. It is usually seen in such localities on the Hunter, Macleay, and Clarence Rivers, which consist, near the entrance and for some miles distant, of salt water with numerous sand-banks, where these birds may be occasionally observed busily engaged in fishing. The beak of this bird is large, broad, conical, and pointed; the lower mandible is slightly curved upwards; the colour is black. The head is large, and neck thick; both the head and neck are of a rich deep glossy green, changing when it reaches the occiput into beautiful iridescent colours of violet and purple, which, when viewed under a brilliant sunshine or in a changing light, display the iridescent tints in a most brilliant manner, shining with a metallic effulgence equal to that seen in the Peacock. The greater wing-coverts, scapularies, lower part of the back and tail, dark brown mixed with rich bluish green, which changes in the adult to a rich glossy green tinged with a golden lustre. The smaller wing-coverts, lower part of the neck and back, and upper part of the breast white speckled with ashy brown, which becomes white in the adult; lower part of the breast, thighs, and inner part of the wings white. Eyes brilliant, and dark hazel in colour. The legs are blackish with a dark tinge of red, becoming in the adult of a bright red colour, which, as I have been informed, when the bird flies with the legs stretched out, looks like a long red tail. The legs are usually dirty with excremental matter, imparting to them a white appearance, so that the natural colour is seldom seen, except when they just emerge from the water. It is a large feeder, and these birds must consume, in their native haunts, a great quantity of fishes and reptiles. It measures 3 feet 10 inches to the top of the head, and is not yet full-grown; they are said to attain 4 to 5 feet in height. It is shy in disposition and difficult of approach in its wild state; this can readily be supposed when it is observed in captivity; for although very docile and readily tamed, still the keen, watchful eye appears always upon you, with a brilliant and piercing look, which causes a feeling of the impossibility of escaping its penetrating glance. Its feeding-grounds and places of rest being about sand-pits, sand-banks, and exposed morasses near the sea-coasts, it is impossible to approach this wary bird without being seen. The first evening it was at my house, seeking for a roosting place, it walked into the hall, gazed at the gas-lamp which had just been lighted, and then proceeded to walk up-stairs, but not liking the ascent, quietly walked down again and returned into the yard, and afterwards went to roost in the coach-house between the carriages, to which place it now retires regularly every evening soon after dark. It is always observed to face the sun, and moves about the yard, following the course of that luminary; it may always be found in that part of the yard where the sun is shining, and with the face invariably towards it. When hungry, it follows the cook about (who usually feeds it); and if she has neglected its food, looks into

the kitchen as if to remind her of the neglect, and waits quietly, but with a searching eye, during the time the meat is cutting up, until it is fed. It is amusing to observe this bird catch flies: he remains very quiet, as if asleep, and on a fly passing him, it is snapped up in his beak in an instant. The only time I observed any manifestation of anger in him was when the "Mooruks" were introduced into the yard where he was parading about: these rapid, fussy, noisy birds running about his range excited his indignation; for on their coming near him, he slightly elevated the brilliant feathers of the head, the eyes became very brilliant, he ruffled his feathers, and clattered his mandibles as if about to try their sword-like edge upon the intruding "Mooruks;" but his anger subsided with these demonstrations, except an occasional flapping of his powerful wings. One day, however, on one of the "Mooruks" approaching too near him, he seized it with his mandibles by the neck, on which the "Mooruk" ran away and did not appear in any way injured.

MISCELLANEOUS.

On the Electrical Organs of Fishes. By M. SCHULTZE.

THE remarkable researches of M. Bilharz upon the *Malapterurus* commenced a new era in the history of the electrical fishes, by the discovery of the so-called electrical nervous plates. The subsequent works of MM. Kölliker, Ecker, Kupffer, and Keferstein tend to show that these plates exist in all the electrical fishes. M. Schultze now furnishes us with more exact details upon these interesting organs in the Torpedo.

In their microscopic appearance, the prisms of the Torpedo exactly resemble those of the *Gymnotus*; nevertheless the employment of the microscope soon shows some remarkable differences of structure in them. The transverse partitions, which in the *Gymnoti* are formed by fibrous conjunctive tissue, present a far more delicate texture in the Torpedos, being composed of gelatinous conjunctive tissue or mucous tissue (*Schleimgewebe*). This difference, however, is in relation to the great development which the gelatinous conjunctive tissue in general acquires in the organs of the *Plagiostomi*. These partitions are traversed by vessels and nerves, like the more resistant and fibrous walls of the prisms. In the spaces enclosed between the gelatinous transverse septa, other transverse partitions, of far greater solidity, are arranged; these are, properly speaking, the transverse septa hitherto indicated by different authors. A gelatinous partition therefore alternates regularly with a more solid one; and in this latter M. Schultze recognizes an electrical plate.

Hitherto the gelatinous partitions (the true septa, according to M. Schultze) were regarded as spaces filled with a liquid, in which the nerves and vessels were freely suspended. Pacini, and after him Remak and Kölliker, perceived that in each of these supposed spaces the nerves form a delicate network applied against the lower surface of each of the solid partitions (*electrical plates* of Schultze). This arrangement is confirmed by Schultze, who says that the nerves